



PHYSIKALISCHES KOLLOQUIUM

Mittwoch, 10.07.2013, um 17:15 Uhr

Ort: Reichenhainer Str. 90; Neues Hörsaalgebäude, Raum: 2/N013



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TU Chemnitz

Advances in Raman Spectroscopy for Monitoring Processes

Raman spectroscopy is a powerful optical spectroscopy technique which provides the vibrational fingerprint of a material. Since the experimental proof demonstrated by Sir C.V. Raman in 1928, Raman spectroscopy became an indispensable tool for science, and, as well, for many practical applications. Needing very intense monochromatic light sources and very sensitive light detectors, the progress was powered by the advent of lasers and charge-coupled devices. Today Raman spectroscopy can be used for chemical analysis and identification, and with the help of the Raman selection rules, e.g. crystal orientation can be also determined. All this makes this technique a perfect tool for in situ monitoring of complex processes.

Especially when applied to organic materials Raman spectroscopy provides a manifold of information about chemical bonds, molecular symmetry, orientation, chemical environment and charging effects. After a few examples, the limitations of the classical Raman spectrometer designs for monitoring dynamic processes of organic materials will be discussed, as well as possible ways to circumvent the compromise between the spectral range of the acquisition window and resolution using spectrometers with Echelle gratings.

Alle Zuhörer sind ab 17:00 Uhr zum Kaffee vor dem Hörsaal eingeladen.